



## **ELS 3.3 Batch**

The system for automating  
manual soldering applications

## The Inertec ELS 3.3 Batch is the best solution for flexible production with a high level of product mix

Hundreds of INERTEC multi-axis soldering systems from the ELS series have been used since 1993 in electronics productions worldwide.

These soldering systems enable virtually all manual soldering applications to be automated. The soldering quality is on a par with that of forming gas mass soldering systems. This system, which is preferred by numerous well-known electronics service providers, offers a solid design and really simple programming. The super-quick maintenance of the soldering unit for which the system is known ensures full availability of the system even in multi-shift operation. The extensive equipment offered in the basic system along with the servo axes kinematics are the prerequisite for optimum soldering. Using the soldering nozzle quick-change system, the unit can be modified with just a few hand movements to handle the most varied of soldering tasks. A precise control of the soldering heights and temperatures forms the basis for the reliable process controls required by the user.

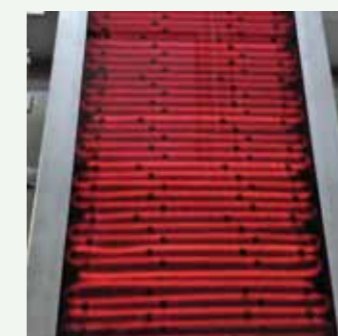


The soldering module that is supplied with two simultaneous or autonomous soldering modules ensures the maximum technological availability for all products; large connectors or point soldering – not a problem for this system. An interchangeable soldering module and a transportation unit are also available upon request. The use of lead-free solder is obligatory and the soldering module is enamelled throughout.

It's often those little things in life that make the difference. The solder bar feed enables a more cost-effective 1-kilo bar to be processed instead of coils of solder wire. The solder feed is easy to access and the bars are inserted with ease.

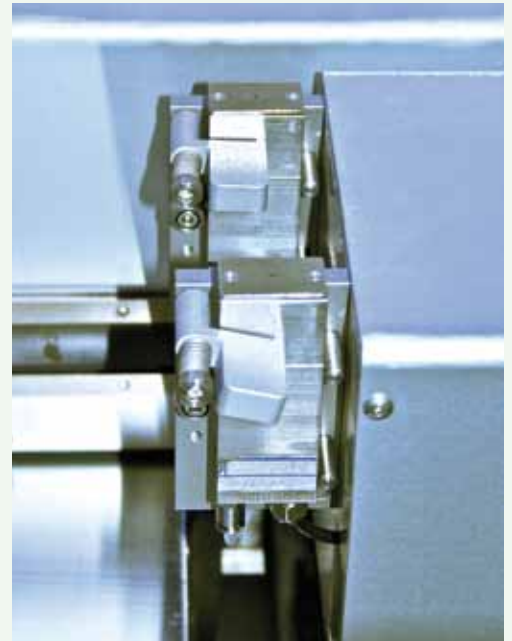


The soldering system is equipped with a multi-stage glass ceramic pre-heating system, specially developed for sub-assembly production.



## ELS 3.3 – the perfect prerequisite for automated processes

The ELS 3.3 soldering system has been designed for the production mix of small and medium series. The design of its soldering angle enables the ELS 3.3 to be operated both with wetted as well as virtually maintenance-free, coated high-grade steel nozzles. This makes sure that each circuit board is soldered with the optimum parameters - using standard nozzles between 3 and 30 mm in diameter. A 60-mm wide wave nozzle can be used for smaller wave applications. Here, the generously dimensioned solder crucible with its efficient heating system guarantees consistently precise temperatures. The soldering module is equipped with an intelligent flux axis which can take both spray fluxer as well as Microdrop fluxer. The glass ceramic pre-heating system developed in-house also ensures that even the most thermally challenging of circuit boards can be processed - with top heating if required.



Take your pick from a multitude of interchangeable nozzles to suit those special soldering tasks. We have the ideal solution for virtually all your soldering needs.



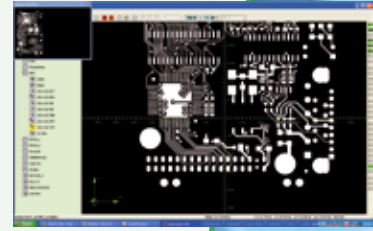
The application possibilities of the ELS 3.3 are varied and range from prototype development right through to medium series. From coils and electrolytic capacitors through to cable assembly and up to high-density connector strips - the module can process a variety of components that would be unsuitable for a reflow process.

Increased quality demands in the automotive sector call for a qualified soldering process, with the respective process controls and batch traceability – an evident advantage of this automated solution. Manual soldering will usually only be accepted in exceptional circumstances.

Today, the efficiency of the software plays a significant role.

How quickly can I implement my project?

Well, if you have the right tools ... in next to no time. Offline – generate the basic program with ease, either graphically using the workplace or by means of Gerber files. Already at this stage you can optimize process paths, calculate cycle times and launch a simulation run. You then simply adapt the process parameters on the machine's computer to suit the circuit board – job done.



### Technical specifications:

Machine type: ELS 3.3 Batch  
Dimensions L x W x H: 2250 x 1100 x 1800 mm  
Weight: approx. 800 kg without solder  
Principle of function: Miniwave (max. 2)  
Processible formats: Max. LP 500 x 500 mm  
Fluxer: Spray fluxer, Microdrop fluxer possible  
Pre-heating: IR, top heating optional  
Soldering wave: 3 - 30 mm as standard  
Solder bath: 40 - 50 kg, max. 350°C, coated in high-grade steel  
Nitrogen consumption: 0.2 – 5 m3/h  
Nitrogen pre-heating: Up to 250°C

### Options:

- N2 pre-heating up to 250°C
- Several miniwave modules (parallel operation or additional tools)
- N2 monitoring as process control
- High-performance IR bottom heating
- High-performance IR top heating
- Process monitoring camera in realtime
- Position correction (Fiducial module)
- Warpage correction to prevent deflections
- Barcode reader for selecting programs with process parameters
- Integration of a workplace as a loading shuttle
- Traceability concept available





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